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TI - Vegetable oil-modified benzoxazine precursors for elec. insulators and
braking materials and their preparation

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CODEN: CNXXEV

DT - Patent

LA - Chinese

IC - ICM C08F242-00

CC - 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 45

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PATENT NO.

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CN 1999-114603 19990106

CLASS

PATENT NO.

CLASS

PATENT FAMILY CLASSIFICATION CODES

CN 1259530	ICM	C08F242-00
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OS - MARPAT 134:179309

AB - The vegetable oil-modified benzoxazine precursors are prepd. from starting materials contg. phenol 40-70, vegetable oils 10-35, primary amines 20-70, and formaldehyde (30-40%) 45-100 parts; and dispersing the reaction products with 4-10 parts dispersing agents. The polymers obtained by ring-opening polyrn. of the precursors with curing agents or in the presence of catalysts are useful for elec. insulators and braking materials using at >155.degree.. Thus, glass fabric was impregnated in a 50% soln. of 90 parts benzoxazine precursor (using in resin transfer molding) and 10 parts tung oil-modified benzoxazine precursor (prepd. from phenol, tung oil, formaldehyde, and aniline), and laminated to give a laminate having bending strength 767.1 MPa, vs. 235.9 MPa for a laminate with no vegetable oil-modified benzoxazine precursors.

ST - vegetable oil modified benzoxazine precursor prepn; phenol formaldehyde vegetable oil amine benzoxazine; benzoxazine vegetable oil modified elec insulator; brake material vegetable oil modified benzoxazine

IT - Polymers, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(benzoxazine-based; prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)

IT - Cashew (*Anacardium occidentale*)

RL: RCT (Reactant); RACT (Reactant or reagent)
(nutshell liq.; prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)

IT - Acids, uses

RL: CAT (Catalyst use); USES (Uses)

- (org. and inorg.; prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - Brakes (mechanical)
 Electric insulators
 Laminated materials
 (phenolic resin binders for brake materials and elec. insulators from vegetable oil-modified benzoxazine precursors)
- IT - Phenolic resins, preparation
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (phenolic resin binders for brake materials and elec. insulators from vegetable oil-modified benzoxazine precursors)
- IT - Glass fiber fabrics
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenolic resin binders for brake materials and elec. insulators from vegetable oil-modified benzoxazine precursors)
- IT - Crosslinking agents
 Crosslinking catalysts
 (prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - Lewis acids
 RL: CAT (Catalyst use); USES (Uses)
 (prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - Castor oil
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - Linseed oil
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - Tung oil
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - Amines, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (primary; prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - Polymerization
 (ring-opening; prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - Fats and Glyceridic oils, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (vegetable; prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - 100-97-0, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (curing agents; prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)
- IT - 7646-85-7, Zinc chloride, uses

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RL: CAT (Catalyst use); USES (Uses)
(curing catalysts; prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)

IT - 254-18-2DP, Benzoxazine, derivs., polymers
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)

IT - 50-00-0, Formaldehyde, reactions 62-53-3, Aniline, reactions 74-89-5, Methylamine, reactions 75-04-7, Ethylamine, reactions 100-46-9, Benzylamine, reactions 108-95-2, Phenol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of vegetable oil-modified benzoxazine precursors for elec. insulators and braking materials)

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